

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
 United States Patent and Trademark
 Office
 Box PCT
 Washington, D.C. 20231
 ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

| | |
|---|---|
| Date of mailing (day/month/year) 23 September 1999 (23.09.99) | |
| International application No. PCT/CA99/00073 | Applicant's or agent's file reference 801-49PC |
| International filing date (day/month/year) 05 February 1999 (05.02.99) | Priority date (day/month/year) 05 February 1998 (05.02.98) |
| Applicant SUMMACH, Terry, Emerson et al | |

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

01 September 1999 (01.09.99)

☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

| | |
|---|---|
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35 | Authorized officer C. Carrié) Telephone No.: (41-22) 338.83.38 |
|---|---|

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| | | |
|--|---|--|
| Applicant's or agent's file reference 801-49PC | FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below. | |
| International application No. PCT/CA 99/ 00073 | International filing date (day/month/year) 05/02/1999 | (Earliest) Priority Date (day/month/year) 05/02/1998 |
| Applicant FLEXI-COIL LTD. et al. | | |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.

INTERNATIONAL SEARCH REPORT

National Application No

T/CA 99/00073

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 A01C7/00 A01C5/06 A01C23/02 A01B15/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A01C A01B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| A | GB 1 574 412 A (AINSLEY) 3 September 1980 cited in the application see the whole document --- | 1,5,8 |
| A | US 5 163 780 A (FINCHAM) 17 November 1992 see column 3, line 21 - column 5, line 18; figures 1-3 --- | 1 |
| A | CA 2 099 555 A (HENRY) 3 January 1995 see the whole document --- | 1 |
| A | CA 2 105 050 A (WICKSTROM) 28 November 1994 see page 3, paragraph 3 - page 5, paragraph 2; figures 1-3 --- | 1 |
| A | US 2 703 044 A (ADAIR) 1 March 1955 --- | |
| | -/-- | |

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

11 June 1999

Date of mailing of the international search report

23/06/1999

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Vermander, R

INTERNATIONAL SEARCH REPORT

International Application No.

T/CA 99/00073

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| A | US 5 605 196 A (CASE CORP.) 25 February 1997 ----- | |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA 99/00073

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|----------------------------|--------------------------|
| GB 1574412 | A | 03-09-1980 | DE 2608105 A KE 3330 A | 14-04-1977 28-10-1983 |
| US 5163780 | A | 17-11-1992 | NONE | |
| CA 2099555 | A | 03-01-1995 | NONE | |
| CA 2105050 | A | 28-11-1994 | US 5537942 A | 23-07-1996 |
| US 2703044 | A | 01-03-1955 | NONE | |
| US 5605196 | A | 25-02-1997 | NONE | |

17
REC'D 10 MAY 2000

TPO PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



| | | | |
|--|--|--|--|
| Applicant's or agent's file reference 801-49PC | | See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) FOR FURTHER ACTION | |
| International application No. PCT/CA99/00073 | International filing date (day/month/year) 05/02/1999 | Priority date (day/month/year) 05/02/1998 | |
| International Patent Classification (IPC) or national classification and IPC A01C7/00 | | | |
| Applicant FLEXI-COIL LTD. et al. | | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
- ☐ This report is also accompanied by AN NEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

| | |
|---|---|
| Date of submission of the demand 01/09/1999 | Date of completion of this report 09.05.00 |
| Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 | Authorized officer Johansson, K Telephone No. +49 89 2399 2091  |

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/CA99/00073

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

| | | | |
|-------|---------------------|---------------------------|------------|
| 15-25 | as originally filed | | |
| 1-14 | as received on | 06/04/1999 with letter of | 01/04/1999 |

Claims, No.:

| | |
|------|---------------------|
| 1-68 | as originally filed |
|------|---------------------|

Drawings, sheets:

| | | | |
|------------|----------------|---------------------------|------------|
| 1/10-10/10 | as received on | 06/04/1999 with letter of | 01/04/1999 |
|------------|----------------|---------------------------|------------|

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/CA99/00073

☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

☐ complied with.

☒ not complied with for the following reasons:

see separate sheet

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

☒ all parts.

☐ the parts relating to claims Nos. .

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|------|--------|---------|
| Novelty (N) | Yes: | Claims | 1-68 |
| | No: | Claims | |
| Inventive step (IS) | Yes: | Claims | 59-67 |
| | No: | Claims | 1-58,68 |
| Industrial applicability (IA) | Yes: | Claims | 1-68 |
| | No: | Claims | |

2. Citations and explanations

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Re Item IV

Lack of unity of invention

1). The separate inventions are:

An agricultural implement comprising a knife and a conduit secured to the angled blade of the knife according to claims 1 to 52,

A knife apparatus according to claims 53 to 58,

A seeding-knife assembly comprising a body-member and a replaceable tip-member according to 59 to 67 and

A procedure for planting seed with a knife whose blade has not only a side-slope-angle but also a forward-pitch-angle.

2) They are not so linked as to form a single general inventive concept (Rule 13.1 PCT) for the following reasons:

i) - the independent claim 1 defines an implement including a knife and conduit secured to the angled blade of the knife,

ii) - the independent claim 53 defines the structure of a knife creating a slit-opening in the ground which must not be used as a seeding knife as it is only suitable for inserting materials such as seeds in the ground,

iii) - the independent claim 59 defines a knife having a replaceable tip but lacking features for inserting materials such as seeds in the ground,

iv) - the independent claim 68 defines a procedure for planting seed in the ground comprising a knife whose knife blade has not only a side-slope-angle but also a forward-pitch-angle. This knife is however not provided with a conduit for conducting materials such a seed to the ground and/or a replaceable tip.

The definitions of the knife are so different in the independent claims that they do not solve a single common technical problem.

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 1). The present application does not meet the requirements of Article 33(3) PCT because the subject matter of claims 1 and 53 does not involve an inventive step.
 - a). The document CA-A-2,099,555 discloses a double shoot ground opener comprising a knife having an angled blade 2, a conduit secured to the blade for conducting materials such as seed to the ground to a mouth 10 located at a depth below the ground surface to deposit the materials directly behind the angled blade in a slit opening created by the angled blade. The angled blade is formed with an over-surface 1 and an under-surface 6 which intersect at a line defining a knife edge 32 of the blade. The knife edge has an angle to the horizontal of 45 degrees. Although the document is silent about the mounting of the knife it is obvious for a skilled person that the knife is mounted to the frame of an implement.
 - b). As regards claim 53, the document CA-A-2,099,555 discloses an agricultural knife apparatus which is so constructed that it is suitable for inserting materials such as seeds into a slit-opening created in the ground. The apparatus includes a shank 14, a blade 2 and a transition zone at which the shank and the blade are jointed integrally. The blade is formed with an over-surface 4 and under-surface 6 which intersect at a line defining a knife edge 32 and slopes at an angle of 45 degrees.
 - c). The determined extension down into the ground of the angled blade in claims 1 and 53 comes within the limits of depth for normal sowing. The remaining differences of the subject matter of claims 1 and 53 are minor changes of the design of the agricultural knife of the cited Canadian document involving no inventive step.

Consequently, the claims 2 to 52 and 54 to 58 dependent on claims 1 and 53 lacks also an inventive step.
 - d). The method of planting seed according to claim 68 differs mainly in that the knife blade is maintained at a depth no more than about 15 cm and makes an angle relative to the ground, termed the side-slope-angle, and to the horizontal, termed the forward-pitch-angle, of between 30 and 60 degrees. The selected depth and angle come within the scope of customary practice followed by persons skilled in the art and does not therefore involve an inventive step.

- 2). A seeding knife assembly comprising a body-member and a replaceable tip-member mounted by a spline and a complementary socket is not disclosed in the state of the art. The subject matter of claim 59 is therefore new and inventive since there are no hints to such a mounting in the state of the art. The claims 60 to 67 are directed to further embodiments of a seeding knife assembly of claim 59 and meet also the requirements of the PCT.

Re Item VII

Certain defects in the international application

- 1). The document cited above represents the closest prior art. The description lacks a reference to that document and does not disclose the invention as claimed to meet the requirements of Rule 5.1 (a) (ii) and (iii) PCT.
- 2). The features of claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
- 3). Depths and lengths are not expressed in the metric system using SI units, see Rule 10.1(a) PCT.

Rec'd PCT/PTO 31 JUL 2000 09/623847

~~533 Rec'd PCT/PTO 07 SEP 2000~~

**ANTHONY
ASQUITH**

Commissioner of Patents
Washington, DC 20231

28 July 2000

Patent Agent

Anthony Asquith BSc
Registered Patent Agent
(Canada and USA)
Chartered Patent Attorney (UK)
European Patent Attorney

Dear Sir,

Re: Entry into the National Phase in United States
from International PCT Application PCT/CA99/00073
International Filing Date: 05 February 1999
Earliest Priority Date: 05 February 1998
Title: MINIMUM TILL SEEDING KNIFE
Applicant: SUMMACH ET AL.
Our File Ref: 801-49US

Enclosed are the papers for Entry into the National Phase in United States of the above-identified international patent application.

Upon Entry, we wish to introduce the following Preliminary amendments into the patent specification.

In the disclosure: please substitute the enclosed page 25/1 in place of page 25 of the international patent specification.

In the claims: please cancel claims 1-68 as contained in the PCT patent specification and substitute the new claims 69-88 as now enclosed.

Submitted by,



Anthony Asquith
Reg 32373
Agent for the Applicant

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Postal Address:

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519 746 6732

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**ANTHONY
ASQUITH**

Patent Agent

Anthony Asquith BSc
Registered Patent Agent
(Canada and USA)
Chartered Patent Attorney (UK)
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519 888 6093

The Commissioner of Patents
Washington, DC 20231

no/623847
~~533 Rec'd PCT/PTO 07 SEP 2000~~
REC'D PCT/PTO 31 JUL 2000

28 July 2000

Dear Sir,

SUBMISSION OF ASSIGNMENT DOCUMENT FOR REGISTRATION
Ser.No: (not yet known) derived from PCT/CA99/00073

Title: MINIMUM TILL SEEDING KNIFE
Applicant: SUMMACH, Terry Emerson et al.
Our Ref: 801-49US

We now submit the Assignment documents in respect of the above patent application for registration before the U.S. Patent Office. The details are as follows:

ASSIGNOR: SUMMACH, Terry Emerson
OF: 313 Capilano Place, Saskatoon, Saskatchewan S7K 4J7
Canada

ASSIGNOR: SUMMACH, Bradley T
OF: 411 Chotem Rise, Saskatoon, Saskatchewan S7N 4M4 Canada

ASSIGNEE: FLEXI-COIL LTD.
OF: PO Box 1928, 1000 - 71st Street East, Saskatoon,
Saskatchewan S7K 4J7 Canada

DATE OF ASSIGNMENT: 27 June 2000


NO. OF PATENT APPLICATIONS: One

FEE ENCLOSED: \$ 40.00

ADDRESS FOR CORRESPONDENCE: Anthony Asquith
Anthony Asquith & Co.
173 Westvale Drive
Waterloo, Ontario
Canada N2T 1B7

I hereby declare that, to the best of my knowledge and belief, the information on this cover sheet is true and correct.

Submitted by,

X 
Anthony Asquith
Regn No 32373
Agent for the Applicant

Encl:
1. Assignment document
2. Cheque

USA

Attorney's Ref: 801-49US

ASSIGNMENT OF ALL INTEREST IN AN INVENTION BEFORE THE ISSUE OF A PATENT

We, SUMMACH, Terry Emerson
of: 313 Capilano Place
Saskatoon, Saskatchewan S7K 4J7
Canada

and: SUMMACH, Bradley T
411 Chotem Rise
Saskatoon, Saskatchewan S7K 4M4
Canada

declare that we are the owners of assignable and transferable rights in the invention entitled:

MINIMUM TILL SEEDING KNIFE

as fully described and claimed in the specification attached to our accompanying patent application, Serial No: (not yet known) and for a consideration worth at least one dollar respectively to each of us, the consideration having been paid and received in full leaving no portion whatsoever of the consideration now outstanding, do hereby sell, assign, and transfer, all assignable and transferable rights and interests in and to the invention, and all corresponding rights, title, and interest in and to any patent which may issue therefor, to:

FLEXI-COIL LTD.
PO Box 1928
1000 - 71st Street East
Saskatoon, Saskatchewan S7K 3S5 Canada

Signatures:



Terry Emerson Summach

Date: JUNE 27, 2000



Bradley T Summach

Date: JUNE 27, 2000